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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,259	10/21/2003	Charles L. Compton	CCCI 0110 PUS	3418

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BROOKS KUSHMAN P.C.
1000 TOWN CENTER
TWENTY-SECOND FLOOR
SOUTHFIELD, MI 48075

EXAMINER	
NGUYEN, STEVEN H D	

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/690,259	COMPTON ET AL.	
	Examiner	Art Unit	
	Steven HD Nguyen	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-56* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21,23-49 and 51-56* is/are rejected.

7)☒ Claim(s) *22 and 50* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 1/3/06 has been entered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 11 and 39 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recite "monitoring the second bucket arrangement" is vague and indefinite because it's unclear what the second token bucket arrangement is monitored. Please clarify, so the meter and boundary of the claims cane be determined.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 and 29 rejected under 35 U.S.C. 102(b) as being anticipated by Fichou (USP 6118791).

Regarding claims 1 and 29, Fichou teaches a method of traffic regulation in a packet communication network, the network including a traffic regulator for regulating traffic at the packet level, the traffic regulator including a bucket mechanism, the bucket mechanism including a token bucket associated with a subscriber, the token bucket being configured to receive new tokens at a fill rate and configured with a bucket depth (Fig 3, Ref 30 is a regular device includes a plurality of buckets, each bucket which is associated with a data source " subscriber", configured to receive token at a fill rate and a bucket depth "tokens that allocated for the source at beginning of the connection, token pool", col. 6, lines 16-54), the method comprising handling packets that arrive at the regulator in accordance with the token bucket configuration for the token bucket associated with the subscriber (col. 6, lines 16-54); measuring a demand placed on the packet communication network by the subscriber (col. 6, line 55 to col. 7, line 15); and dynamically adjusting the token bucket configuration for the token bucket associated with the subscriber based on the demand to affect the way that packets arriving at the regulator are handled (Col. 7, lines 4-36, adjusting token generation rate based on the demand in order to handle the arrival of packets at the regulator).

6. Claims 21 and 49 rejected under 35 U.S.C. 102(e) as being anticipated by Thomas (USP 20030086140).

Regarding claims 21 and 49, Thomas teaches a method of traffic regulation in a packet communication network, the network including a traffic regulator for regulating traffic at the packet level, the traffic regulator including a bucket mechanism, the bucket mechanism including a first and second token buckets associated with a subscriber, the first token bucket being configured to receive new tokens at a fill rate and configured with a bucket depth, the second token bucket being configured to receive new tokens at a second fill rate and having a second bucket depth (Page 14, Sec 163, a first token bucket has length and fills tokens at 9 Mbs and the second token bucket has a length and fills at token at 6 Mbs) the method comprising handling packets that arrive at the regulator in accordance with the first and second token bucket configurations, wherein the first token bucket uses tokens to regulate the packet flow in terms of packet rate and wherein the second token bucket uses tokens to regulate the packet flow in terms of data rate such that a particular packet is subjected to handling in accordance with both the first token bucket and the second token bucket (Page 9, Sec 95).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 2-4, 9-10, 13, 30-32, 37-38 and 41 rejected under 35 U.S.C. 103(a) as being unpatentable over Fichou in view of Shorey (USP 6829649).

Regarding claims 2-4 and 30-32, Fichou fails to fully disclose the claimed invention. However, Shorey teaches handling packets that arrive at the regulator based on a current number of tokens present in the token bucket (Fig 3) and a particular packet that arrives at the regulator in a normal fashion (Fig 3, Ref 350, 370, 380 and 390) when the current number of tokens present in the token bucket is sufficient, otherwise, handling the particular packet that arrives at the regulator in a special fashion such dropping the packet (Fig 3, Ref 360).

Since, Shorey suggests that each token generation rate is adjusted according the incoming connections. Therefore, it would have been obvious to one of ordinary skill in the art to implement a step of handling a particular packet that arrives at the regulator in a normal fashion when the current number of tokens present in the token bucket is sufficient, otherwise, handling the particular packet that arrives at the regulator in a special fashion as disclosed by Shorey into the teaching of Fichou. The motivation would have been to reduce the congestion of the network.

Regarding claims 9 and 37, Shorey teaches measuring the demand further comprises: monitoring the number of tokens present in the token bucket (Fig 3, Ref 340).

Regarding claims 10 and 38, Shorey teaches measuring the demand further comprises determining a burst demand based on observations made while monitoring the number of tokens present in the token bucket over a period of time (FIG 3, measuring packet size and monitoring token value).

Regarding claims 13 and 41, Shorey teaches dynamically adjusting further comprises modifying the bucket depth (Fig 3, Ref 620).

9. Claims 5-8, 14-16, 33-36 and 42-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fichou/Shorey as applied to claims 1 and 21 above, and further view of Wang et al. (USP 6,748,435).

Regarding claims 5 and 33, Fichou/Shorey fail specifically teaches that the special fashion of packet handling is to assign a classification to the packet. However, Wang teaches assigning classification (remark color) to the packet (Fig. 5 and 6; col. 5 lines 19-33). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include that the special fashion of packet handling is to assign a classification to the packet as taught by Wang et al. in the assembly of Fichou/Shorey in order to improve the performance of assured traffic.

Regarding claims 6 and 34, Fichou/Shorey fail specifically teaches that handling packets further comprises handling a particular packet that arrives at the regulator based on the current number of tokens present in the token bucket by assigning a classification to the particular packet based on the current number of tokens present. However, Wang teaches handling a particular packet that arrives at the regulator based on the current number of tokens present in the token bucket by assigning a classification to the particular packet based on the current number of tokens present (fig. 6; col. 5 lines 48-59). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include handling a particular packet that arrives at the regulator based on the current number of tokens present in the token bucket by assigning a classification to the particular packet based on the current number of

tokens present as taught by Wang et al. in the assembly of Fichou/Shorey in order to improve the performance of assured traffic.

Regarding claims 7 and 35, Fichou/Shorey fail specifically teaches that the assigning of the classification takes place in accordance with a predetermined relationship between number of tokens present in the token bucket and appropriate classification. However, Wang teaches the assigning of the classification takes place in accordance with a predetermined relationship between number of tokens present in the token bucket and appropriate classification (fig. 6; col. 5 lines 48-59 and 60-67; col. 6 lines 1-44). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include the assigning of the classification takes place in accordance with a predetermined relationship between number of tokens present in the token bucket and appropriate classification as taught by Wang et al. in the assembly of Fichou/Shorey in order to improve the performance of assured traffic.

Regarding claims 8 and 36, Fichou/Shorey fail specifically teaches the assigning of the classification takes place in accordance with a probability mass function that determines the probability mass for each classification based on number of tokens present in the token bucket. However, Wang teaches the assigning of the classification takes place in accordance with a probability mass function that determines the probability mass for each classification based on number of tokens present in the token bucket ("demotion probability", col. 6 lines 1-22; "promotion probability", col.6 23-44). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include the assigning of the classification takes place in accordance with a probability mass function that determines the probability mass for each classification based on number of tokens present in the token bucket as

taught by Wang et al. in the assembly of Fichou/Shorey in order to improve the performance of assured traffic.

Regarding claims 14 and 42, Fichou/Shorey fail specifically teaches handling packets further comprises handling a particular packet that arrives at the regulator based on a current number of tokens present in the token bucket by assigning a classification to the particular packet according to a policy based on the current number of tokens present; and wherein dynamically adjusting further comprises modifying the policy to which the assigning of the classification conforms. However, Wang teaches handling a particular packet that arrives at the regulator based on a current number of tokens present in the token bucket by assigning a classification to the particular packet according to a policy based on the current number of tokens present (fig. 6; col. 5 lines 48-59); and wherein dynamically adjusting further comprises: modifying the policy to which the assigning of the classification conforms (col. 5 lines 60-67; col. 6 lines 1-44). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include handling packets further comprises: handling a particular packet that arrives at the regulator based on a current number of tokens present in the token bucket by assigning a classification to the particular packet according to a policy based on the current number of tokens present; and wherein dynamically adjusting further comprises: modifying the policy to which the assigning of the classification conforms as taught by Wang et al. in the assembly of Fichou/Shorey in order to improve the performance of assured traffic.

Regarding claims 15 and 43, Fichou/Shorey fail specifically teaches the policy to which the assigning of the classification conforms is based on a predetermined relationship between number of tokens present in the token bucket and appropriate classification. However, Wang

teaches assigning of the classification conforms is based on a predetermined relationship between number of tokens present in the token bucket and appropriate classification (fig. 6; col. 5 lines 48-59 and 60-67; col. 6 lines 1-44). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include assigning of the classification conforms is based on a predetermined relationship between number of tokens present in the token bucket and appropriate classification as taught by Wang et al. in the assembly of Fichou/Shorey in order to improve the performance of assured traffic.

Regarding claims 16 and 44, Fichou/Shorey fail specifically teaches the policy to which the assigning of the classification conforms is based on a probability mass function that determines the probability mass for each classification based on number of tokens present in the token bucket. However, Wang teaches assigning of the classification conforms is based on a probability mass function that determines the probability mass for each classification based on number of tokens present in the token bucket ("demotion probability", col. 6 lines 1-22; "promotion probability", col.6 23-44). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include the assigning of the conforms is based on a probability mass function that determines the probability mass for each classification based on number of tokens present in the token bucket as taught by Wang et al. in the assembly of Fichou/Shorey in order to improve the performance of assured traffic.

10. Claims 17, 20, 45 and 48 rejected under 35 U.S.C. 103(a) as being unpatentable over Fichou in view of Wang.

Regarding claims 17 and 45, Fichou discloses the limitation of claims 1 and 29. However, Fichou does not specifically teaches that handling packets further comprises handling

a particular packet that arrives at the regulator based on the current number of tokens present in the token bucket by assigning a classification to the particular packet based on the current number of tokens present. However, Wang teaches handling a particular packet that arrives at the regulator based on the current number of tokens present in the token bucket by assigning a classification to the particular packet based on the current number of tokens present (fig. 6; col. 5 lines 48-59). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include handling a particular packet that arrives at the regulator based on the current number of tokens present in the token bucket by assigning a classification to the particular packet based on the current number of tokens present as taught by Wang et al. in the assembly of Fichou in order to improve the performance of assured traffic.

Regarding claims 20 and 48, Wang teaches that modifying the policy to which the assigning of the classification conforms (col. 5 lines 60-67; col. 6 lines 1-44). Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include modifying the policy to which the assigning of the classification conforms as taught by Wang et al. in the assembly of Fichou in order to improve the performance of assured traffic.

11. Claims 18-19 and 46-47 rejected under 35 U.S.C. 103(a) as being unpatentable over Fichou and Wang as applied to claims 17 and 45 above, and further in view of Shorey.

Regarding claims 18 and 46, these claims are similar to claims 10 and 38. Therefore, these claims are rejected under similar rationale.

Regarding claims 19 and 47, these claims are similar to claims 13 and 41. Therefore, these claims are rejected under similar rationale.

12. Claims 23-27 and 51-55 rejected under 35 U.S.C. 103(a) as being unpatentable over Shorey in view of Jeffries (US 20040062259).

Regarding claims 23-27 and 51-55, Shorey teaches a method of traffic regulation in a packet communication network, the network including a traffic regulator for regulating traffic at the packet level, the traffic regulator including a bucket mechanism, the bucket mechanism including a token bucket associated with a subscriber, the token bucket being configured to receive new tokens at a fill rate and configured with a bucket depth, the method comprising: handling packets that arrive at the regulator in accordance with the token bucket configuration (Fig 2, 4 and 6, col. 6, lines 17-40), wherein the token bucket uses tokens to regulate the packet flow by removing tokens from the token bucket when handling packets (Fig 3, Ref 390). Shorey does not specifically teaches that the amount of tokens to be removed being based on the amount of the flow in terms data, packet and being further based on a multiplier that is classification of the flow. However, Jeffries teaches that the amount of tokens to be removed being based on the amount of the flow and being further based on a classification of the flow (page 1, Sec 3).

Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include the amount of tokens to be removed being based on the amount of the flow and being further based on a classification of the flow as taught by Jeffries into Shorey in order to obtain additional control and improve the performance of assured traffic because Shorey suggests the flows comprising classes.

13. Claims 28 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jeffries and Shorey as applied to claims 13 and 51 above, and further view of Fichou.

Jeffries and Shorey fail to disclose the claimed invention. However, in the same field of endeavor, Fichou discloses measuring a demand placed on the packet communication network by the subscriber (col. 6, line 55 to col. 7, line 15); and dynamically adjusting the token bucket configurations for the subscriber based on the demand (Col. 7, lines 4-36, adjusting token generation rate based on the demand in order to handle the arrival of packets at the regulator).

Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to include a method and system for adjusting the token bucket configuration based on the user demand as disclosed by Fichou into the system of Jeffries and Shorey. The motivation would have been to improve throughput of the system.

Allowable Subject Matter

14. Claims 12, 22, 40 and 50 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. Claims 11 and 39 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven HD Nguyen whose telephone number is (571) 272-3159. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on (571) 272-3134. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven HD Nguyen
Primary Examiner
Art Unit 2665
March 14, 2006